

Notice of Allowability

Application No.

09/784,846

Applicant(s)

GARCERAN ET AL.

Examiner

Jason M Perilla

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed February 3, 2005.
2. ☒ The allowed claim(s) is/are 1, 4, 8, 9, 21, and 23 renumbered respectively as claims 1-6.
3. ☒ The drawings filed on 14 April 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20050426</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. Claims 1, 4, 8, 9, 21, and 23 are pending in the instant application.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Martin I. Finston on April 26, 2005.

The application has been amended as follows wherein the following versions of claims 1, 4, 8, 9, 21, and 23 replace their respective versions in the application in their entirety:

1. A method of processing digital signals to be transmitted in analog form, said method comprising:

in a digital-to-analog converter (DAC) having a conversion frequency, converting a digital signal having an input frequency to produce an analog signal image output at a radio frequency greater than the input frequency, CHARACTERISED IN THAT:

a) said digital signal is one of a plurality of digital input signals each of said digital input signals ~~has~~ having an input frequency, and ~~said~~ the input frequencies are positioned in within non-overlapping portions of a frequency band whose width is one-half the conversion frequency;

b) the analog signal image output of the DAC includes a plurality of images of ~~each digital input signal~~ the frequency band, and said plurality of images are grouped in successive non-overlapping frequency bands referred to as zones, such that each zone contains one image of each of the plurality of digital input signals; and

c) the method further comprises selecting digital input signal images for transmission, wherein at least two digital input signal images are selected from different zones and correspond to different ones of the plurality of digital input signals.

4. The method of claim 1, further comprising:

directing each selected digital input ~~analog~~ signal image onto a respective path;
amplifying each said selected digital input ~~analog~~ signal image on said respective path; and

transmitting each said amplified selected digital input ~~analog~~ image using at least one respective antenna.

8. The method of claim 1 further comprising:

adjusting the conversion frequency so as to produce at least one digital input ~~analog~~ signal image at a transmission frequency.

9. The method of claim 1 further comprising:

adjusting at least one of the plurality of digital input frequency frequencies so as to produce at least one digital input ~~analog~~ signal image at a transmission frequency.

21. A transmitter comprising:

a digital to analog converter (DAC) having a conversion frequency and configured to receive a plurality of digital input signals, each having an a different input frequency, and to convert each digital input signal of said plurality of digital input signals into analog form, thereby to produce corresponding digital input analog signal images as analog signals at different radio frequencies, each of which is greater than the its corresponding input frequency;

CHARACTERISED IN THAT the transmitter further comprises:

signal processing circuitry configured to receive said plurality of digital input signals and to condition said digital input signals for input to the DAC by positioning their respective input frequencies in non-overlapping portions of a frequency band whose width is one-half the conversion frequency; and

transmitter circuitry configured to select certain of said analog digital input signal images for transmission, wherein said digital input signal images are grouped in a plurality of non-overlapping successive frequency bands referred to as zones, such that each zone contains one digital input signal image of each digital input signal, and the transmitter circuitry is configured to select from different zones at least two digital input signal images that correspond to different ones of the plurality of digital input signals.

23. The transmitter of claim 21 wherein said transmitter circuitry comprises:

signal distribution circuitry configured to direct a first selected digital input analog signal image of a first frequency band on a first path and a second selected digital input analog signal image of a second frequency band on a second path;

a first amplifier on said first path for amplifying said first selected analog digital input signal image on said first path;

a second amplifier on said second path for amplifying said second selected analog digital input signal image on said second path;

a first antenna connected to said first path for transmitting said first selected digital input analog signal image after amplification; and

a second antenna connected to said second path for transmitting said second selected digital input analog signal image after amplification.

Claims 1, 4, 8, 9, 21, and 23 are renumbered as claims 1-6, respectively, and the claim dependency is renumbered accordingly.

Allowable Subject Matter

3. Claims 1, 4, 8, 9, 21, and 23 renumbered as claims 1-6, respectively, are allowed.

4. The following is an examiner's statement of reasons for allowance:

Claims 1, 4, 8, 9, 21, and 23 renumbered as claims 1-6, respectively, are allowed because the prior art of record does not anticipate or obviate the transmission of at least two images output from a digital to analog converter (DAC) wherein the at least two

images are selected from among separate zones or image frequency bands as specified. The prior art reference Kelley (US 5220557) only discloses that one frequency zone output from the DAC is filtered (fig. 5, ref. 50n) and the images within that particular frequency zone are amplified, but does not disclose that one signal may be chosen from one zone (i.e. 50n) and a second signal may be chosen from a second zone (i.e. 50n-1) for transmission.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jason M. Perilla
April 26, 2005

jmp


CHIEH M. FAN
PRIMARY EXAMINER